INDEX

HIGH ENERGY CHEMISTRY

Volume 5, Numbers 1-6, 1971

HIGH ENERGY CHEMISTRY
Volume 5, Numbers 1-6, 1971
(A translation of Khimiya Vysokikh Énergii)

A

Abdrashitov, É. F.-232
Afanas'ev, A. M.-445
Alfimov, M. V.-105, 270, 414, 466
Almanov, G. A.-477
Andreev, O. M.-105
Antoshin, G. V.-63
Arifov, U. A.-1, 69, 79
Arshakuni, A. A.-499
Arshakuni, R. G.-475
Avdonina, E. N.-211
Aver'yanov, S. V.-411
Aver'yanova, L. A.-411

B

Bagdasar'yan, Kh. S.-7, 121, 236, 304, 354
Baider, L. M.-378
Bakh, N. A.-156, 249, 321, 457
Barashev, P. P.-24
Barkalov, I. M.-47, 412
Batekhna, I. G.-270
Batsanov, S. S.-312
Beér, A. A.-67
Belevskii, V. N.-252
Belyi, A. A.-299
Biteman, V. B.-331
Blinov, L. M.-97
Bogatyreva, A. I.-30
Bol'shakov, A. I.-47
Bol'shakov, B. V.-479
Bol'shakova, S. I.-325, 452
Bondarevskii, S. I.-67
Borisenko, G. L.-249
Borisov, E. A.-317, 475
Borovkova, V. A.-304
Brovikova, I. N.-146
Brusentseva, S. A.-71, 158
Buchachenko, A. L.-30
Bugaenko, L. T.-57, 233, 252, 424, 468
Bulgakov, Yu. V.-461
Burkov, G. I.-373
Burzel', F. B.-257
Byakov, V. M.-445, 470

C

Chepel, D. V.-304
Chernov, I. G.-1, 69, 79
Chervochkin, É. N.-91, 97, 279
Chervonenko, V. S.-428
Chirakadze, G. G.-74
Chirkin, N. N.-254
Chirkinyan, S. S.-475
Chisibov, A. K.-485
Chkheidze, I. I.-36, 76, 113, 363
Chursin, G. P.-320

D

Dain, B. Ya.-187
Degterev, I. A.-140
Degteva, T. G.-231, 325
Dmitrieva, G. V.-419
Dodonov, A. M.-501
Dolin, P. I.-44, 71, 72, 73, 164, 166, 215, 475
Dyatlov, V. T.-257
Dzantiev, B. G.-140, 150, 152, 402, 475
Dzhagatspanyan, R. V.-341, 475
Dzikovitskaya G. G.-317

E

Egorov, G. F.-65, 419, 495
Egorova, V. A.-187
Eletskii, V. V.-294
Éndyus'kin, P. N.-257, 274
Eremin, L. P.-238, 410, 467
Ershov, B. G.-168, 170, 261
Evseev, A. G.-491

F

Faizi, N. Kh.-497
Fel', N. S.-164, 166, 215
Filatov, É. S.-307
Firsov, V. G.-62
Firsova, L. P.-143
Fok, N. V.-378
Forys, M.-199, 204
Frankevich, E. L.-318
Frunze, T. A,-73
Furman, M. S,-405

G

Gambaryan, I. A.-475
Gerasimova, T. S.-181
Gezalov, A. A.-141
Gil'man, A. B.-285, 461
Glikman, T. S.-124
Gol'danskii, V. I. 47, 412
Gol'din, S. I.-414
Golivin, B. A.-145
Gorbunova, T. N.-70
Gordon, E. B.-16
Grachev, S. A.-136
Grishina, A. D.-158
Gromov, V. V.-464
Gulyaev, G. V.-391
Gur'ev, M. V.-471

I

Igoshin, V. I.-357
Il'icheva, Z. F.-497
Iskakov, L. I.-237, 238, 474
Ivanov, Yu. A.-137, 344

K

Kabakchi, A. M.-132, 481
Kabakchi, S. A.-73, 162, 221, 246, 422
Kalamazov, R. V.-465
Kalmykov, I. Z.-146
Kalyazin, E. P.-445
Kamenetskaya, S. A.-448
Kaplan, A. M.-412
Karaban, A. A.-173, 333
Karasev, A. L.-81, 156
Karaseva, L. G.-464
Kargin, V. A.-329
Karpov, L. G.-349, 431
Karpov, V. L.-421
Kartasheva, L. I.-327

Kashevskaya, N. G.-256, 491
Katov, A. G.-52
Kazakov, V. P.-193
Kazanskii, V. B.-396
Khaikin, G. I.-44, 72
Khait, Yu. L.-91, 97, 279
Kiryukhin, D. P.-412
Klinshpont, É. R.-12
Kochetkov, N. K.-215
Kolbanovskii, Yu. A.-391, 483, 465
Kolotyrkin, V. M.-285, 461
Komleva, E. N.-113
Koritskii, A. T.-145
Kornienko, V. N.-475
Korolev, A. V.-320
Kostin, A. K.-322, 323, 369
Kotov, A. G.-138
Kotov, B. V,-316
Kovalev, V. O.-40
Kovalev, Yu. V.-7, 236
Kozlov, V. T.-256, 491
Krasotkina, I. A.-128
Kritskaya, D. A.-382
Krongauz, V. A.-234, 487
Kropachev, E. V.-136
Krylov, O. V.-141, 160
Kryukov, A. I.-187
Kudryashov, L. I.-215
Kuleshov, A. P.-76
Kulikov, I. A.-386
Kupriyanov, S. E.-473
Kutsyna, L. M.-331
Kuzin, V. I.-307
Kuz'minskii, A. S.-231, 325, 452
Kuznetsov, Yu. D.-61

L

Laba, V. I.-487
Ladygin, B. Ya.-148, 242, 405
Lapshin, A. I.-312
Larionova, Yu. A.-256
Lavrentovich, Ya. I.-132
Lebedev, Ya. S.-226, 244
Leenson, I. A.-335
Lukhovitskii, V. I.-421
Lysov, G. V.-91, 97
Lyubimova, O. I.-138

M

Makarochkina, L. M.-475
Makarov, I. E.-170
Makarov, V. I.-137, 246
Makshantsev, B. I.-240
Maksimov, A. I.-146
Maksimov, L. V.-265
Mal'tsev, E. I.-154, 337
Mannanova, Kh. Kh.-319, 465, 483
Markevich, S. V.-414
Mashkevich, A. Ya.-63
Medvedev, B. Ya.-316
Medvedovskii, V. I.-65, 495
Mel'nikov, V. P.-47
Migdal', E.-199, 204
Mikhailov, A. I.-47
Mikheev, Yu. A.-64, 65
Milinchuk, V. K.-12, 417
Milyutinskaya, R. I.-7, 236
Minachev, Kh. M.-63
Minaichev, E. V.-62
Mukhamediev, Z. A.-69, 79
Muratbekov, M. B.-116
Myasishcheva, G. G.-62

N

Nadykto, B. T.-61, 320
Nanobashvili, E. M.-74
Nedoborova, L. I.-215
Nevostruev, V. A.-57, 233,
Nichiporov, F. G.-426, 470
Nikol'skii, V. G.-128, 369, 373
Niyazov, Kh. R.-319, 465, 483
Novikov, G. V.-232
Novozhilov, V. A.-67

O

Oblivantsev, A. N.-238, 410, 467
Obukhov, Yu. V.-62
Oraevskii, A. N.-102, 357
Orekhov, V. D.-481
Orlov, V. Yu.- 471, 493
Ovchinnikov, A. A.-299
Ovsyannikov, A. A.-137
Ozerova, G. A.-108

P

Pak, A. M.-61, 320
Pariiskii, G. B.-64
Parshin, G. S.-193
Pashinin, V. I.-491
Pavlova, S. V.-152
Perminov, A. P.-16
Pernikova, T. E.-221
Petrukhin, N. V.-448
Pichuzhkhin, V. I.-499
Pikaev, A. K.-70, 168, 170, 327, 422
Pilyugina, N. G.-181
Piskunov, A. K.-108, 142
Pleskov, Yu. V.-294
Poddubnyi, I. Ya.-411
Poduzhailo, V. F.-331
Podzorova, E. A.-481
Polak, L. S.-91, 97, 137, 257, 274, 279, 344
Ponomarev, A. I.-256
Ponomarev, A. N.-16, 382
Potapov, V. K.-237, 238, 435, 474
Pozharov, S. L.-1, 69, 79
Poznyak, A. L.-333, 489
Pravednikov, A. N.-316
Pravilov, A. M.-265, 349, 431
Pribush, A. G.-71
Prilezhaeva, E. N.-487
Prokhoda, A. L.-234
Protopopov, Kh. V.-193
Pshezhetskii, S. Ya.-52
Puntezhis, S. A.-168
Pyatibratov, Yu. P.-495

R

Revina, A. A.-249, 322, 323, 369
Riebel', I. M.-489
Roganov, V. S.-62
Roginskii, V. A.-428
Roketashvili, E. B.-391
Roshchektaev, B. M.-424, 468
Rotenberg, Z. A.-294
Rozin, S. G.-241
Rozmanova, L. D.-61, 320
Rumyantsev, B. M.-318
Rumyantsev, Yu. M,-475
Rygalov, L. N.-485

S

Safaryan, M. N.-175
Safin, Yu. A.-341
Saraeva, V. V.-116, 499
Savel'ev, G. I.-62
Sazhnikov, V. A.-105
Sazonov, L. A.-312
Seregin, P. P.-67
Sergeev, G. B.-335
Shagisultanova, G. A.-173, 333, 489
Shamonina, N. F.-52
Shashkov, A. S.-325
Shatrov, V. D.-36
Shchegoleva, I. S.-124
Shekhtman, R. I.-487
Shekk, Yu. B.-270
Shelimov, B. N.-396, 441
Shemarov, F. V.-304
Shimchuk, O. S.-402

Shishkov, A. V.-150, 152, 402
Shmykov, Yu. I.-274
Shorin, S. N.-183
Shostenko, A. G.-501
Shubin, V. N.-71, 73, 158, 221
Shubnyakov, V. F.-64, 65
Shvedchikov, A. P.-140
Sibirskaya, G. K.-422
Sinits'ina, Z. A.-121, 354
Sklyarova, A. G.-30
Skurat, V. E.-259
Skvortsov, V. G.-417
Skvortsov, V. I.-414, 466
Slovetskii, D. I.-344
Slovokhotova, N. A.-329, 497
Smirnov, A. M.-421
Smirnov, V. A.-105
Snegotskii, V. I.-487
Sokolik, I. A.-318
Sokol'skii, D. V.-61, 320
Sorokin, V. V.-435
Sosnovskii, O. A.-327
Starostin, E. K.-145
Strunin, V. P.-479
Stupochenko, E. V.-175
Sukhov, F. F.-329
Sumin, L. V.-85
Surin, S. A.-396
Suris, A. L.-183
Svettsov, V. I.-146

T

Tal'roze, V. L.-24, 382
Taranenko, L. A.-471, 493
Ten, E. I.-61
Tikhomirov, L. A.-232
Tikhomirova, N. S.-128
Tikhonov, A. S.-173
Tikhonova, S. V.-231
Tkachenko, O. P.-63
Tochin, V. A.-369
Toptygin, D. Ya.-64, 65
Trenke, Yu. V.-411
Tret'yakova, N. I.-426, 470
Trofimov, V. I.-76, 113, 363
Trukhtanov, V. A.-232
Tsvetkov, Yu.-239
Tsvetkov, Yu. D.-477
Tubasova, I. A.-128
Tunitskii, N. N.-285, 461
Tverdokhlebov, V. I.-254
Unukovich, M. S.-150

V

Vail', E. I.-146
Vannikov, A. V.-40, 154, 337
Vasil'ev, A. G.-146
Vasil'ev, V. G.-108, 142
Vasil'ev, V. I.-193
Verboskaya, G. V.-473
Verein, N. V.-108, 142
Vereshchinskii, I. V.-481
Vilesov, F. I.-265, 349, 431
Virin, L. I.-341
Vitokhin, A. D.-290
Vladimirova, M. V.-386
Voevodskaya, M. V.-378
Vol'f, E. M.-290
Volodin, N. L.-257, 274
Vurzel', F. B.-91, 97, 274

Y

Yakimchenko, O. E.-226, 244
Yaroshevich, A. A.-241
Yudanov, V. F.-339

Z

Zagorets, P. A.-419, 501
Zakharov, Yu. A.-57, 233,
Zakharov-Nartsissov, O. I.-181
Zamaraev, K. I.-441
Zaozerskaya, L. A.-164, 166
Zatonskii, S. V.-116
Zhabrova, G. M.-141
Zhdamirov, G. G.-475
Zhdanov, G. S.-417
Zhigunov, V. A.-44, 72
Zhutkovskii, R. B.-441
Zimina, G. M.-156, 457
Zolotarevskii, V. I.-40
Zubkov, A. V.-145
Zverev, A. B.-132

HIGH ENERGY CHEMISTRY
Volume 5, Numbers 1-6, 1971
(A translation of Khimiya Vysokikh Énergii)

Volume 5, Number 1 January-February, 1971

	Engl.	Russ.
Ion-Molecular Clusterization Reactions in Water Vapor at High Pressures – U. A. Arifov, S. L. Pozharov, and I. G. Chernov	1	3
Recombination Luminescence of Frozen Solutions of Aromatic Amines Induced by Ultraviolet Irradiation – R. I. Milyutinskaya, Yu. V. Kovalev, and Kh. S. Bagdasar'yan	7	10
Phototransformations of Free Radicals in Polymers. IV. Formation of Paramagnetic Centers in γ-Irradiated Polymers Subjected to Irradiation with UV Light – É. R. Klinshpont and V. K. Milinchuk	12	16
Application of an Atomic Hydrogen Quantum Generator to Study the Elementary Processes with Participation of Hydrogen Atoms in the Gas Phase and on Solid Surfaces. II. Reaction of Hydrogen Atoms with Polycrystalline Tungsten and Platinum – E. B. Gordon, A. P. Perminov, and A. N. Ponomarev	16	21
Competition between Thermal and Photochemical Mechanisms for Mass Conversion in Pulsed Laser Radiation – P. P. Barashev and V. L. Tal'roze	24	30
Reactions of Electronically Excited Nitroxide Radicals in Solids – A. I. Bogatyreva, A. G. Sklyarova, and A. L. Buchachenko	30	37
Reaction between Atomic Hydrogen and Some Substituted Benzenes at Low Temperatures – V. D. Shatrov and I. I. Chkheidze	36	44
Study of Charged Particles by the Pulse Method during Radiolysis of Liquid Hydrocarbons – A. V. Vannikov, V. O. Kovalev, and V. I. Zolotarevskii	40	49
Pulse Radiolysis of Liquid Ammonia: Optical Absorption Spectrum and Kinetics of the Destruction of the Ammoniated Electron – G. I. Khaikin, V. A. Zhigunov, and P. I. Dolin	44	54
Investigation of the Paramagnetic Centers and Molecular Mobility in Irradiated Acrylonitrile by EPR – A. I. Bol'shakov, V. P. Mel'nikov, A. I. Mikhailov, I. M. Barkalov, and V. I. Gol'danskii	47	57
Role of Surface Centers in the Heterogeneous Radiational Polymerization of Isobutylene – N. F. Shamonina, A. G. Katov, and S. Ya. Pshezhetskii	52	63
Effect of Additives on the Radiolysis of Ammonium Perchlorate and Nitrate – Yu. A. Zakharov, L. T. Bugaenko, and V. A. Nevostruev	57	69
ABSTRACTS		
Effect of Radiative Emission of a Nuclear Reactor on the Catalytic Activity of Platinum-Group Metals in Hydrogenation Reactions – D. V. Sokol'skii, B. T. Nadykto, A. M. Pak, E. I. Ten, Yu. D. Kuznetsov, and L. D. Rozmanova	61	74
Muon Chemistry. VI. Effect of Longitudinal Magnetic Fields on Meson Polarization in Unsaturated Organic Compounds – E. V. Minaichev, G. G. Myasishcheva, Yu. V. Obukhov, V. S. Roganov, G. I. Savel'ev, and V. G. Firsov	62	74
Radiation Isotope Exchange between Aluminum Oxide and Molecular Oxygen – G. V. Antoshin, Kh. M. Minachev, A. Ya. Mashkevich, and O. P. Tkachenko	63	76

Photoinduced Destruction of Poly(methyl methacrylate) in the Presence of Ferric Chloride – Yu. A. Mikheev, G. B. Pariiskii, V. F. Shubnyakov, and D. Ya. Toptygin 64 77
Mechanism via which Photoexcitation Energy is Degraded in Photostabilized Polymers – Yu. A. Mikheev, V. F. Shubnyakov, and D. Ya. Toptygin 65 78
Radiolysis of n-Octane in Two-Phase Aqueous–Organic Systems – G. F. Egorov and V. I. Medvedovskii 65 78
Radiation Chemical Addition of Carbon Tetrachloride to 1-Heptene –V. A. Novozhilov and A. A. Beér 67 79
Radiolysis and Thermolysis of Tin Monoxide, Studied by the Methods of Mössbauer Spectroscopy and Chemical Analysis – S. I. Bondarevskii and P. P. Seregin 67 80
Ionic-Molecular Reactions in Hydrogen at High Pressures – U. A. Arifov, S. L. Pozharov, I. G. Chernov, and Z. A. Mukhamediev 69 81
Influence of Alkali Impurities on the γ-Radiolysis of Crystalline Potassium Nitrate – T. N. Gorbunova and A. K. Pikaev 70 82
Radiolysis of Aqueous Solutions of Phenol – S. A. Brusentseva, A. G. Pribush, V. N. Shubin, and P. I. Dolin 71 83
Pulsed Radiolysis of Liquid Ammonia: the Reaction of an Ammoniated Electron with an Ammonium Ion – G. I. Khaikin, V. A. Zhigunov, and P. I. Dolin 72 84
Radiolysis in a Periodic Source Field – T. A. Frunze, S. A. Kabakchi, V. N. Shubin, and P. I. Dolin 73 85

BRIEF COMMUNICATIONS
Influence of the Molecular Weight of Aliphatic Thioalcohols on Their Radiation Chemical Transformations – E. M. Nanobashvili and G. G. Chirakadze 74 86
Radicals in Acrolein γ-Irradiated at 77°K – A. P. Kuleshov, I. I. Chkheidze, and V. I. Trofimov 76 87
Mass-Spectrometric Study of the Kinetics of D_5^+ Formation – U. A. Arifov, S. L. Pozharov, I. G. Chernov, and Z. A. Mukhamediev 79 90

CHRONICLES
Conference on the Radiation Chemistry of Low-Molecular Organic Compounds in the Condensed Phase – A. L. Karasev 81 92

Volume 5, Number 2 March-April, 1971

A Study of Certain Ion-Molecule Reactions of Simple Molecules at High Collision Energies – L. V. Sumin 85 99
Kinetics of Nonequilibrium Chemical Reactions in a Pulsed SHF Discharge. I. Computer Method of Calculating Kinetic Characteristics of Nonequilibrium Chemical Reactions in a Pulsed SHF Discharge – F. B. Vurzel', G. V. Lysov, L. S. Polak, Yu. L. Khait, and É. N. Chervchkin 91 105
Kinetics of Nonequilibrium Chemical Reactions in a Pulsed SHF Discharge. II. Experimental Study of the Electrodynamic Parameters of a Nonequilibrium Nitrogen Plasma in a Pulsed SHF Discharge, and Their Comparison with Calculated Results – L. M. Blinov, F. B. Vurzel', G. V. Lysov, L. S. Polak, Yu. L. Khait, and É. N. Chervochkin 97 112
Combustion Limits in a Radiation Field – A. N. Oraevskii 102 118
Two Quantum Photoionization and Deprotonation of Aromatic Amines in Acid Media at 77°K – V. A. Smirnov, V. A. Sazhnikov, O. M. Andreev, and M. V. Alfimov 105 121
Interaction of Electrons with Monomers in the Radiolysis and Photolysis of Ethanol.

	Engl.	Russ.
I. Methyl Methacrylate – V. G. Vasil'ev, N. V. Verein, G. A. Ozerova, and A. K. Piskunov	108	125
Reaction of Hydrogen Atoms with Solid Nitrosobenzene and Phenylnitromethane – V. I. Trofimov, E. N. Komleva, and I. I. Chkheidze	113	131
Effect of Charged Particle Scavengers on the γ-Radiolysis of 2,2,4-Trimethyl Pentane (Isooctane) – M. B. Muratbekov, S. V. Zatonskii, and V. V. Saraeva	116	134
Absorption Coefficient of Electrons Captured in Alcohols at 77°K – Z. A. Sinits'ina and Kh. S. Bagdasar'yan	121	140
Spectrophotometric Investigation of the Behavior of Aqueous Sulfoquinone Solutions under the Influence of Light and under Dark Conditions – I. S. Shchegoleva and T. S. Glikman	124	144
Radiothermoluminescence of Graft Copolymers Based on Polyethylene and Aromatic Monomers – V. G. Nikol'skii, I. A. Krasotkina, N. S. Tikhomirova, and I. A. Tubasova	128	149
Track Effects in Several Polymers with Dye Additives – A. B. Zverev, Ya. I. Lavrentovich, and A. M. Kabakchi	132	153
ABSTRACTS		
Radiolysis of Aqueous Cystamine Hydrochloride Solutions – S. A. Grachev and E. V. Kropachev	136	158
Effect of Inelastic Processes on the Electron Energy Distribution in a Glow Discharge in N_2, $N_2 + O_2$, and CO_2 – Yu. A. Ivanov, V. I. Makarov, A. A. Ovsyannikov, and L. S. Polak	137	159
The Low-Temperature Radiolysis Mechanism on the Surface of Silica Gels. The Radiolysis of Methanol – O. I. Lyubimova and A. G. Kotov	138	161
Reactions of Excited Radicals. Photolysis of iso-C_3H_7I and a Mixture of $HI-C_3H_6$ and $HI-CF_3CH=CH_2$ – B. G. Dzantiev, I. A. Degterev, and A. P. Shvedchikov	140	162
Mechanism for the Radiation Chemisorption of Oxygen and Hydrogen on Zinc and Aluminum Oxides – A. A. Gezalov, G. M. Zhabrova, and O. V. Krylov	141	163
Interaction of Electrons with Monomers in the Radiolysis and Photolysis of Ethanol. II. Photolysis in the Presence of Ethylene – V. G. Vasil'ev, N. V. Verein, and A. K. Piskunov	142	164
The Diffusion and Retention of Cooled Particles in Targets Undergoing Bombardment – L. P. Firsova	143	165
Ion-Radicals in the Radiolysis of Diacyl Peroxides – A. T. Koritskii, A. V. Zubkov, E. K. Starostin, and B. A. Golivin	145	166
Decomposition and Absorption of Carbon Dioxide during Protracted Out-Gassing of Insulated Discharge Equipment – I. N. Brovikova, A. I. Maksimov, and V. I. Svettsov	146	167
Some Features of Electrochemical Oxidation in Irradiated Aqueous Solutions – I. Z. Kalmykov, A. G. Vasil'ev, and E. I. Vail'	146	168
BRIEF COMMUNICATIONS		
Photolysis of Liquid Methanol Solutions of Hydrogen Peroxide – B. Ya. Ladygin	148	170
Energy Transfer in the Radiolysis of Mixtures of Hydrogen Sulfide and Ethylene – B. G. Dzantiev, M. S. Unukovich, and A. V. Shishkov	150	172
Radiolysis of the Propylene–Nitrogen System. Formation of Nitriles – B. G. Dzantiev, S. U. Pavlova, and A. V. Shishkov	152	173
Measurement of Yield of Charged Particles Formed upon Impulse Radiolysis in Liquid Methyl Alkyl Ketones – A. V. Vannikov and E. I. Mal'tsev	154	174
Formation of Peroxide Radicals in Vitreous Hydrocarbons during γ-Irradiation in the Presence of Molecular Oxygen – G. M. Zimina, A. L. Karasev, and N. A. Bakh	156	176
Radicals Formed during Radiolysis of Sodium Decylsulfonate and Its Aqueous Solutions – S. A. Brusentseva, A. D. Grishina, and V. N. Shubin	158	177

	Engl.	Russ.
Heterogeneous Radiolysis of Semiconductors and Dielectrics – O. V. Krylov	160	179
Spectrum of the Hydrated Electron in Alkaline Solutions – S. A. Kabakchi	162	180
Pulse Radiolysis of Aqueous Solutions of Pyrimidine Bases in the Presence of Oxygen. Uracil Solutions – N. S. Fel', L. A. Zaozerskaya, and P. I. Dolin	164	182
Pulse Radiolysis Studies of Neutral Aqueous Solutions of Deoxyribose and Pyrimidine Nucleosides (Thymidine). OH Radical Reactions – N. S. Fel', L. A. Zaozerkaya, and P. I. Dolin	166	184
Color Centers in γ-Irradiated Alkali Hydrates at 77°K – B. G. Ershov, S. A. Puntezhis, and A. K. Pikaev	168	185
Temperature Regions in which Electrons and Free Radicals Entrapped in Glassy Polar Systems γ-Irradiated at 77°K are Destroyed – I. E. Makarov, B. G. Ershov, and A. K. Pikaev	170	187
Determination of the Reaction Rate Constsnts for Hydrogen Atoms with Some Complex Compounds of Co(III), Fe(III), and Cr(III) – G. A. Shagisultanova, A. S. Tikhonov, and A. A. Karaban	173	189

Volume 5, Number 3 May-June, 1971

	Engl.	Russ.
Kinetics of Thermal Decay of Diatomic Molecules in an Inert Gas at High Temperatures – M. N. Safaryan and E. V. Stupochenko	175	195
Investigation of the Formation of Amines in Systems Olefin–Ammonia and Olefin – Primary Amine in a Barrier-Layer Discharge – T. S. Gerasimova, N. G. Pilyugina, and O. I. Zakharov-Nartsissov	181	202
Mathematical Modeling of Endothermic Processes in Plasmochemical Reactors – A. L. Suris and S. N. Shorin	183	204
The Mechanism of Photochemical Iodination of Olefins – A. I. Kryukov, V. A. Egorova, and B. Ya. Dain	187	209
Electrochemiluminescence of Alkaline Solutions of Uranin – V. P. Kazakov, V. I. Vasil'ev, G. S. Parshin, and Kh. V. Protopopov	193	216
Radiolysis of Hydrogen Selenide in the Gas Phase – M. Foryś and E. Migdal'	199	223
Radiolysis of Hydrogen Sulfide in the Gas Phase: Radiation Yield of Atomic Hydrogen – M. Foryś and E. Migdal'	204	228
The Role of Hot H Atoms in Processes of Cleavage of C–C Bonds in the Gamma-Radiolysis of Liquid Alkanes – E. N. Avdonina	211	236
Radiolysis of Aqueous Solutions of Aromatic Glucosides – N. S. Fel', L. I. Nedoborova, L. I. Kudryashov, P. I. Dolin, and N. K. Kochetkov	215	241
Investigation of the Kinetics of Destruction of Polarons in the Solid Phase by the Normalized Concentration Method – T. E. Pernikova, S. A. Kabakchi, and V. N. Shubin	221	247
Kinetics for the Conversion of Radical Pairs in Irradiated Dimethylglyoxime – O. E. Yakimchenko and Ya. S. Lebedev	226	253
ABSTRACTS		
Radiation Cross-Linking of Various Rubbers – T. G. Degteva, S. V. Tikhonova, and A. S. Kuz'minskii	231	259
Radiolysis of Ferrous Chloride and Ferric Chloride Solutions in Methyl Alcohol at 77°K – É. F. Abdrashitov, G. V. Novikov, L. A. Tikhomirov, and V. A. Trukhtanov	232	260
Radiolysis of Ammonium Perchlorate. I. Radiolysis Products – V. A. Nevostruev, L. T. Bugaenko, and Yu. A. Zakharov	233	261
Radiolysis of Ammonium Perchlorate. II. Radiolysis Mechanism – V. A. Nevostruev, L. T. Bugaenko, and Yu. A. Zakharov	233	261

Engl./Russ.

Photochromism of Organic Materials. V. Kinetics of Photodissociation of Bis(triphenylimidazolyls) in Benzene Solutions – A. L. Prokhoda and V. A. Krongauz 234 262
Effect of Electron-Acceptor Additives on the Recombination-Luminescence Resulting from Photoionization of Frozen Solutions of Tetramethyl-para-phenylenediamine – R. I. Milyutinskaya, Yu. V. Kovalev, and Kh. S. Bagdasar'yan. 236 263
Electronic Structure and Photoionization of Aromatic Amines – V. K. Potapov and L. I. Iskakov 237 264
Photoionization and Decomposition of Benzaldehyde, Acetophenone, and Benzophenone – L. I. Iskakov and V. K. Potapov 238 265
Radiolysis of Rubidium Nitrate at a Polymorphic Transformation Temperature of 164°C under the Effect of Protons – L. P. Eremin and A. N. Oblivantsev. 238 265
The Theory of Radiation Yield of Radicals in the Solid Phase – B. I. Makshantsev. 240 267
Deceleration of Low-Energy Electrons in Gaseous Media – S. G. Rozin and A. A. Yaroshevich 241 268

BRIEF COMMUNICATIONS
The γ-Radiation Initiated Isomerization of Cyclohexanol to Caproic Aldehyde – B. Ya. Ladygin. 242 269
Photochemical Transformations of Radical Pairs in Crystalline Dimethyl Glyoxime – O. E. Yakimchenko and Ya. S. Lebedev. 244 271
Study of the Formation and Reactions of Cyclohexyl Radicals by Pulse Radiolysis – V. I. Makarov and S. A. Kabakchi. 246 272
Primary Products of the Radiolysis of Methylcyclohexylketone – G. L. Borisenko, A. A. Revina, and N. A. Bakh. 249 274
The Dichloride Ion in γ-Irradiated Frozen HCl Solutions – V. N. Belevskii and L. T. Bugaenko. 252 276
Nature of Ionization in a Low-Pressure Smoking Flame – V. I. Tverdokhlebov and N. N. Chirkin. 254 278
Formation of Paramagnetic Centers in the Radiolysis of Polydimethylsiloxanes Containing the meta-Trifluoromethylphenyl Group – V. T. Kozlov, A. I. Ponomarev, Yu. A. Larionova, and N. G. Kashevskaya. 256 280
Plasmochemical Pyrolysis of Gas Oil – N. L. Volodin, F. B. Burzel', V. T. Dyatlov, L. S. Polak, and P. N. Éndyus'kin. 257 280

CHRONICLES
The Fourth International Congress on Radiation Research – V. E. Skurat. 259 283
International Conference in Czechoslovakia on Progress and Problems in Contemporary Radiation Chemistry – B. G. Ershov. 261 285

Volume 5, Number 4 July-August, 1971

Photolysis of O_2 + CO Mixtures in the 1900-1550 Å Spectral Region – A. M. Pravilov, L. V. Maksimov, and F. I. Vilesov 265 291
Photosensitized cis–trans Isomerization of 2-Pentene as a Result of Energy Transfer from Higher Triplet Levels – Yu. B. Shekk, I. G. Batekha, and M. V. Alfimov . . . 270 297
Preparation of Acetylene and Hydrogen Chloride by Pyrolysis of Chlorohydrocarbons in a Plasma Jet – N. L. Volodin, F. B. Vurzel', L. S. Polak, Yu. I. Shmykov, and P. N. Éndyus'kin 274 302
Rate Coefficients (Constants) of Reactions Initiated by Electron Impact in Electrical Gas Discharges – L. S. Polak, Yu. L. Khait, and É. N. Chervochkin. 279 308

Rates of Growth of Polymer Films in a Glow Discharge in Vapors of Aromatic Compounds – A. B. Gil'man, V. M. Kolotyrkin, and N. N. Tunitskii 285 315
An Investigation of the Temperature Dependence on the Electrical Conductivity of Organic Dielectrics on γ-Irradiation – A. D. Vitokhin and E. M. Vol'f 290 321
An Investigation of the Reactions of Unstable Particles by the Photoemission of Electrons from a Metal into Nitrate Solutions – V. V. Eletskii, Z. A. Rotenberg, and Yu. V. Pleskov 294 325
Kinetics for the Recombination of Active Centers – A. A. Belyi and A. A. Ovchinnikov . . . 299 331
Pulsed Radiolysis of Polymethylmethacrylate Containing Aromatic Compounds – V. A. Borovkova, Kh. S. Bagdasar'yan, D. V. Chepel, and F. V. Shemarov. 304 337
Radiolysis of Liquid Pentane, Cyclohexane, and Certain Alcohols by Means of Auger Electrons – V. I. Kuzin and É. S. Filatov 307 340
The Effect of Shock Waves in Transforming Color Centers Produced by γ-Irradiation in NaCl Crystals – A. I. Lapshin, L. A. Sazonov, and S. S. Batsanov. 312 346

ABSTRACTS
Free Radicals during the Radiolysis of Some Allyl Compounds – B. V. Kotov, B. Ya. Medvedev, and A. N. Pravednikov 316 351
A Semiempirical Method of Calculating Energy Loss of a Fission Fragment in a Medium – E. A. Borisov and G. G. Dzikovitskaya 317 352
Current-Carrier Injection and Its Relationship to the Photoconductivity of Anthracene – E. L. Frankevich, I. A. Sokolik, and B. M. Rumyantsev 318 353
Radiation-Accelerated Migration of Sulfur in Cadmium Sulfide – Kh. Kh. Mannanova and Kh. R. Niyazov. 319 354
Effect of Thermal Neutrons or α-Particles on the Catalytic Activity of Platinum Group Metals in Hydrogenation of Dimethylethynylcarbinol – D. V. Sokol'skii, A. M. Pak, B. T. Nadykto, L. D. Rozmanova, A. V. Korolev, and G. P. Chursin. 320 356
Basic Features of the Radiolysis of Alkyl Ketones in the Condensed Phase. I. Final Products and Radiation Stability – N. A. Bakh 321 357
Basic Features of the Radiolysis of Alkyl Ketones in the Condensed Phase. II. EPR Study of the Primary Products of the Low-Temperature Radiolysis – A. A. Revina and A. K. Kostin 322 358
Basic Features of the Radiolysis of Alkyl Ketones in the Condensed Phase. III. Investigation of the Effect of Dose Rate on the Stabilization of Paramagnetic Particles at 77°K – A. A. Revina and A. K. Kostin 323 359

BRIEF COMMUNICATIONS
NMR Investigation of the Structural Changes in Rubber during Low-Temperature Radiolysis – S. I. Bol'shakova, A. S. Shashkov, T. G. Degteva, and A. S. Kuz'minskii 325 361
The Radiolysis of Sulfuric Acid Solutions of Ethylene Glycol Containing Fe^{2+} Ions and Oxygen – L. I. Kartasheva, O. A. Sosnovskii, and A. K. Pikaev 327 362
The Mechanism of the Radiation Dehydrochlorination of Polyvinyl Chloride – F. F. Sukhov, N. A. Slovokhotova, and V. A. Kargin 329 364
Scintillation Effectiveness and Ionization Potentials of Solvent and Activator – V. B. Biteman, L. M. Kutsyna, and V. F. Poduzhailo. 331 365
The Mechanism of Photochemical Reactions in Frozen Solutions of Complex Compounds of Pt(IV) – G. A. Shagisultanova, A. A. Karaban, and A. L. Poznyak. 333 368
A Chain Photochemical Reaction of Tetranitromethane with Phenylcyclohexene – I. A. Leenson and G. B. Sergeev 335 370
Formation of Solvated Electrons in Hexamethylphosphoramide under Impulse Irradiation – E. I. Mal'tsev and A. V. Vannikov 337 371
Free Radicals in a Glutaric Acid Single Crystal under γ-Irradiation at 77°K – V. F. Yudanov and Yu. Tsvetkov. 339 373

Volume 5, Number 5 September-October, 1971

Ion–Molecule Reactions of Aromatic Compounds. V. Ethylbenzene – L. I. Virin, Yu. A. Safin, and R. V. Dzhagatspanyan 341 379
Kinetics of Carbon Dioxide Decomposition in the Glow-Discharge – Yu. A. Ivanov, L. S. Polak, and D. I. Slovetskii 344 382
Photochemical Processes Occurring during Photolysis of O_2 and Mixtures of O_2 + M, in which M = He, Ar, Xe, N_2, CO_2 – A. M. Pravilov, L. G. Karpov, and F. I. Vilesov 349 388
Two-Quantum Photoionization of Aromatic Amines in the Presence of Benzophenone – Z. A. Sinitsyna and Kh. S. Bagdasar'yan 354 393
Kinetics of an HCl Chemical Laser – V. I. Igoshin and A. N. Oraevskii 357 397
Reactions of Hydrogen Atoms with Solid Isocyanates and Isothiocyanates – V. I. Trofimov and I. I. Chkheidze 363 404
Thermoluminescence of γ-Irradiated n-Alkyl Ketones – A. K. Kostin, V. A. Tochin, A. A. Revina, and V. G. Nikol'skii 369 411
Activation Energy for Radiothermoluminescence of Organic Substances – V. G. Nikol'skii and G. I. Burkov 373 416
Photosensitized Formation of Radicals and Sensitized Photodestruction of Polypropylene and Polyisobutylene at 77°K – L. M. Baider, M. V. Voevodskaya, and N. V. Fok 378 422
Radiation Polymerization of Crystalline Vinyl Acetate (VA) – D. A. Kritskaya, A. N. Ponomarev, and V. L. Tal'roze 382 427
Alpha- and Gamma-Radiolysis of Aqueous Solutions of Ammonium Thiocyanate – M. V. Vladimirova and I. A. Kulikov 386 432
The Kinetics of the Radiation and Thermal Adsorption of CO on γ-Al_2O_3 – G. V. Gulyaev, Yu. A. Kolbanovskii, and E. B. Roketashvili 391 437
A Study of Surface Radiation Defects in γ-Irradiated Silica Gels by the EPR Method – S. A. Surin, B. N. Shelimov, and V. B. Kazanskii 396 443
Replacement of Hydrogen by Fast Tritium Atoms – B. G. Dzantiev, O. S. Shimchuk, and A. V. Shishkov 402 450
Initiation of Cyclohexanol Oxidation with Gamma Radiation – B. Ya. Ladygin and M. S. Furman 405 454

ABSTRACTS

Effect of Additions of Carbonate Ion on the Radiolysis of Rubidium and Cesium Nitrates under the Action of Fast Protons – L. P. Eremin and A. N. Oblivantsev 410 459
Vulcanization of Siloxane Rubbers in the Presence of Organic Monomers and Polymers under the Action of γ-Radiation – I. Ya. Poddubnyi, L. A. Aver'yanova, S. V. Aver'yanov, and Yu. V. Trenke 411 460
Kinetics of the Polymerization of Solid Acrylonitrile in a Field of γ-Radiation – A. M. Kaplan, D. P. Kiryukhin, I. M. Barkalov, and V. I. Gol'danskii 412 461
Study of the Radiolysis of Dextran by the EPR Method – S. I. Gol'din and S. V. Markevich 414 463
Overcharging of Photoexcited Cations of Certain Aromatic Hydrocarbons on Molecules of Medium in Solutions at 77°K – V. I. Skvortsov and M. V. Alfimov 414 464

BRIEF COMMUNICATIONS

The Formation of Free Radicals in Biopolymers during the Action of Ionizing Radiation and Light – V. G. Skvortsov, G. S. Zhdanov, and V. K. Milinchuk 417 466
Radiolysis of Monooctylamine – G. F. Egorov, G. V. Dmitrieva, and P. A. Zagorets .. 419 468
The Coagulating Effect of Ionizing Radiation in Emulsion Polymerization of Vinyl Chloride in the Presence of Cationogenic Emulsifiers – A. M. Smirnov, V. I. Lukhovitskii, and V. L. Karpov 421 470

Effect of KOH on the Kinetics of the Disappearance of Solvated Electrons in Irradiated Methyl Alcohol – A. K Pikaev, G. K. Sibirskaya, and S. A. Kabakchi 422 470
Radiolytic Conversions of Nitrate Ion in Nitric Acid Solutions – L. T. Bugaenko and B. M. Roshchektaev 424 472
Determination of the Yield of H_2O_2 in Acidic Deaerated Aqueous Methanol Solutions – N. I. Tret'yakova and F. G. Nichiporov 426 475
Dissociative Capture of Electrons in Radiolysis of Monocarboxylic Acid Anhydrides – V. S. Chervonenko and V. A. Roginskii 428 476

Volume 5, Number 6 November-December, 1971

Equilibrium of Photolysis of O_2 and O_2 + M Mixtures in the Spectral Region $\lambda > 1550$ Å; M = He, Ar, Xe, N_2, CO_2 – L. G. Karpov, A. M. Pravilov, and F. I. Vilesov..... 431 483
Photoionization and Ion–Molecule Reactions in Quinones and Alcohols – V. K. Potapov and V. V. Sorokin..... 435 487
A Study of the Photochemical Reactions of Cobalt Complexes in Solid Matrices. 1. Mechanism of the Formation of Atomic Hydrogen and Deuterium during Photolysis of the Trisethylenediamine Complex of Co(III) in Acid and Alkali Matrices at 77°K – R. B. Zhutkovskii, K. I. Zamaraev, and B. N. Shelimov..... 441 496
Temperature Dependence of the Radiolysis of Aqueous Solutions. I. Methanol – A. M. Afanas'ev, V. M. Byakov, and E. P. Kalyazin 445 501
Radiolysis of Liquid m-Xylidine – N. V. Petrukhin and S. A. Kamenetskaya..... 448 505
The Role of Charges in Radiochemical Changes in Rubber – S. I. Bol'shakova and A. S. Kuz'minskii..... 452 509
Individual Components of Absorption Spectra Arising upon Impulse Irradiation of Hydrocarbons Saturated with Oxygen – G. M. Zimina and N. A. Bakh 457 515
Breakdown of Benzene-Based Polymer Films in the Glow Discharge – A. B. Gil'man, V. M. Kolotyrkin, Yu. V. Bulgakov, and N. N. Tunitskii 461 519

ABSTRACTS

Mechanism for Annealing of Radiation Defects – L. G. Karaseva and V. V. Gromov..... 464 523
Nature of the Oxygen Adsorption Centers on Cadmium Sulfide – R. U. Kalamazov, Yu. A. Kolbanovskii, Kh. Kh. Mannanova, and Kh. R. Niyazov..... 465 524
Ionic Mechanism of Photodecomposition of Saturated Solvent Molecules at 77°K Sensitized by Aromatic Additives – V. I. Skvortsov and M. V. Alfimov..... 466 525
Postradiation Annealing of Proton-Irradiated Alkali Metal Nitrates with Admixed Divalent Cations – L. P. Eremin and A. N. Oblivantsev 467 526
Radiolysis of Concentrated Aqueous Solutions of Sodium Nitrate – L. T. Bugaenko and B. M. Roshchektaev 468 528
The Yield of Hydrogen Peroxide in Deaerated Acidic Aqueous Methanol Solutions – N. I. Tret'yakova, F. G. Nichiporov, and V. M. Byakov..... 470 530
The Relative Ionization Cross Sections of Complex Molecules of Metastable Atoms of the Intert Gases – L. A. Taranenko, M. V. Gur'ev, and V. Yu. Orlov 471 531
A Mass-Spectrometric Investigation of the Reactions of Excited Atoms and Molecules. VI. The Ionization of the Molecules of Tetrafluoroethylene, Tetrafluoromethane, and Hexafluoropropylene by Excited Atoms of Intert Gases – G. V. Verbovskaya and S. E. Kupriyanov..... 473 533
Dissociative Photoionization of n-Alkylamines – L. I. Iskakov and V. K. Potapov..... 474 534
Kinetic Features of the Radiochemical Formation of HCN in a Nitrogen–Methane System – G. G. Zhdamirov, V. N. Kornienko, E. A. Borisov, Yu. M. Rumyantsev, and B. G. Dzantiev..... 475 535

Radiolytic Decomposition of Cyanides in Aqueous Solutions – R. G. Arshakuni, S. S. Chirkinyan, I. A. Gambaryan, P. I. Dolin, L. M. Makarochkina, and R. V. Dzhagatspanyan 475 536
EPR Spectra and Structure of the Free Radical in γ-Irradiated γ-Aminobutyric and ε-Aminocaproic Acid and β-Alanine Monocrystals – Yu. D. Tsvetkov and G. A. Almanov 477 539

BRIEF COMMUNICATIONS

Effect of a Sulfur Heteroatom on the Radiation Yields of Hydrogen in the Radiolysis of Normal Dialkyl Sulfides and Mixtures of the Latter with Certain Alkanes in the Liquid Phase – V. P. Strunin and B. V. Bol'shakov 479 540
Accumulation of Nitrite Ions during γ and UV Iradiation of Concentrated Sodium Nitrate Solutions – E. A. Podzoreva, V. D. Orekhov, I. V. Vereshchinskii, and A. M. Kabakchi 481 542
Influence of Prelininary Thermovacuum Treatment Conditions on Radiation Yield of Sulfur from Cadmium Sulfide during γ-Radiolysis – Yu. A. Kolbanovskii, Kh. Kh. Mannanova, and Kh. R. Niyazov 483 544
Studies of Intermediate States in Photochemical Reactions of Dyes. V. Sensitized Photooxidation of Azo Dyes belonging to the Picramine R Group – L. N. Rygalov and A. K. Chibisov 485 545
Photoisomerization of Some Sulfur-Containing Ethylene Derivatives – R. I. Shekhtman, E. N. Prilezhaeva, V. A. Krongauz, V. I. Snegotskii, and V. I. Laba 487 546
Free Radicals during Low-Temperature Photolysis of Certain Multinuclear Amines of Co(III) – G. A. Shagisultanova, A. L. Poznyak, and I. M. Reibel' 489 548
Formation of Radicals in the Radiolysis of Butadiene – Acrylonitrile Copolymers of Different Microstructure – V. T. Kozlov, V. I. Pashinin, A. G. Evseev, and N. G. Kashevskaya 491 549
Relative Ionization Cross Sections of n-Alkanes in Ionization by Metastable Argon and Helium Atoms – L. A. Taranenko and V. Yu. Orlov 493 550
Radiolysis of Solutions of Nitrogen Dioxide in Octane – G. F. Egorov, V. I. Medvedovskii, and Yu. P. Pyatibratov 495 551
Radiation Chemical Processes in Polyvinyl Alcohol at low Temperature – N. Kh. Faizi, Z. F. Il'icheva, and N. A. Slovokhotova 497 553
Study of Radical Reactions in the Radiolysis of Hydrocarbons – V. I. Pichuzhkin, A. A. Arshakuni, and V. V. Saraeva 499 554
Radiative-Chemical Synthesis of Chloroethyldichlorophosphine from PCl_3 and Ethylene – P. A. Zagorets, A. G. Shostenko, and A. M. Dodonov 501 556

INDEX

Author Index, Volume 5, Numbers 1-6, 1971 505
Tables of Contents, Volume 5, Numbers 1-6, 1971 509